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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,784	09/29/2006	Hideyuki Ono	121036-0096	7107

35684 7590 11/14/2007  
BUTZEL LONG  
350 SOUTH MAIN STREET  
SUITE 300  
ANN ARBOR, MI 48104

EXAMINER
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REDDY, KARUNA P

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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11/14/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent@butzel.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/594,784	<b>Applicant(s)</b> ONO ET AL.	
	<b>Examiner</b> Karuna P. Reddy	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/29/2006</u> . | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

1. Preliminary amendment filed on 9/29/2006 is made of record. Claims 9, 11 and 13 are cancelled and claims 1-8, 10 and 12 are currently pending in the application.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-4, 7-8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama et al (US 6, 156, 849) in view of Hiramatsu et al (JP 61-171737).

Moriyama et al disclose an acrylic elastomer composition, which comprises an acrylic elastomer obtained by copolymerization with 0.1 to 10% by weight of fumaric acid mono-lower alkyl ester on the basis of total monomer mixture and an aromatic diamine compound vulcanizing agent. It is effectively applicable as a vulcanization molding material for seal members or hose members (abstract). Fumaric acid mono-lower alkyl ester-containing acrylic elastomer can be further copolymerized with other vinyl or olefinic monomer (column 3, lines 9-11). The aromatic diamine compound can be used in an amount of about 0.1 to about 5 parts by weight per 100 parts by weight of the fumaric acid mono-lower alkyl ester-containing acrylic elastomer (column 3, lines 52-56). The acrylic elastomer can be further admixed with a reinforcing agent, a filler, an antioxidant etc, if necessary (column 4, lines 17-21). Its vulcanization molding can be carried out by compression molding, injection molding, transfer molding etc (column 4, lines 28-29).

Moriyama et al is silent with respect to thiazole-based compound; amount of thiazole based compound; and the wall thickness of molded-article, such as gasket or o-ring, of not more than 30 mm.

However, Hiramatsu teaches subjecting elastomer to crosslinking with S or S-containing compounds. The sulfur containing compounds include thiazoles such as mercaptobenzothiazole or dibenzothiazyl disulfide. The crosslinked material obtained has low permanent compressive strain and high heat resistance while maintaining excellent workability and moldability characteristic of

S-crosslinked material (abstract). Therefore, it would have been obvious to one skilled in the art to add thiazoles to the acrylic elastomer composition of Moriyama et al, for the above mentioned advantages.

With respect to the amount of thiazole, while neither reference elucidates that value, it is the examiner's position that thiazole amount is a result-effective variable (MPEP 2144.5) since the amount used clearly affects permanent compressive strain, heat resistance and crosslinking density. Hence, the choice of a particular amount of thiazole (such as the amount in present claims) is a matter of routine experimentation and would have been well within the skill level of, and thus obvious to, one of ordinary skill in the art.

With respect to the wall thickness, given that the composition, of Moriyama et al in view of Hiramatsu, is substantially similar to that of the present claims and the use of vulcanized molding material as a seal member (reads on gaskets or o-rings) is recognized (abstract) by Moriyama et al, it would have been within the scope of a skilled artisan to mold the article to a desired thickness (such as the thickness in present claims) depending on the end use requirements.

5. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama et al (US 6, 156, 849) in view of Hiramatsu et al (JP 61-171737) and Hollingshead (US 3, 989, 665).

The discussion with respect to Moriyama et al in view of Hiramatsu et al in paragraph 4 is incorporated here by reference.

Moriyama et al in view of Hiramatsu et al is silent with respect to amine-based or phenol based antioxidant.

However, Hollingshead teaches substituted phenols which have excellent color characteristics and exhibit unusual and unexpected antioxidant activity (abstract). The composition can be used to protect any material subject to oxidative degradation such as natural and synthetic rubbers (column 2, lines 21-24). Therefore, it would have been obvious to one skilled in the art to add phenol based antioxidant to the acrylic elastomer of Moriyama et al in view of Hiramatsu, for the above mentioned advantages.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karuna P Reddy  
Examiner  
Art Unit 1796

/KR/

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